UNIVERSITY COLLEGE, LONDON.—MECHANICAL PRINCIPLES of ENGINEERING.—On MONDAY, 6th DECEMBER, Professor Eaton Hodgkinson will commence a COURSE of about TWELVE LECTURES on the STRENGTH of MATERIALS in General, with their uses in Construction, including recent researches on the Strength of Columns and Iron Beams; on the Tensile Crushing and Transverse Strength of Materials, &c.; on Bridges, particularly Tubular Bridges, and those of Suspension, &c. Hours of Lecture, HALF-past 4 o'clock, p.m. Subsequent Lectures on Mondays and Thursdays. Fee, £1 1s.: College fee, £5.

An Elementary Course of Lectures, on the Theory of the various Forms of Water-Wheels, of Turbines, of Windmills, of Steam Engines, and collateral subjects, adapted to those commencing the study of Practical Engineering, will be given, if an adequate [illegible]

These Lectures are open to gentlemen who are not otherwise students of the College, as well as to those who are.

JOHN HOPPUS, Ph. D. Dean of the Faculty of Arts and Laws.
CHAS. C. ATKINSON, Secretary to the Council.

November, 1852.

ARCHITECTURE, CIVIL ENGINEERING, SURVEYING, &c.—Offices, 69, Chancery-lane, Holborn.—Established above forty years. Mr. GRAYSON begs to inform those gentlemen who are interested in the above sciences, that he CONTINUES to GIVE INSTRUCTION to Morning and Evening Classes; where, besides architecture, &c. ornamental, perspective, and landscape drawing, with access to an extensive and valuable collection of models and works on the fine arts.—Mr. GRAYSON is in attendance from Nine a.m. to Two p.m. and from six to Nine p.m.

FIRE-PROOF CONSTRUCTION.—FOX and BARRETT'S PATENT.—The great importance of fire-proof construction is shown by the recently published returns of fires in London during the past year, by which it appears that there is a considerable increase as compared with former years, the number annually exceeding 1,000, or an average of three per day.

This result affords strong confirmation of a fact stated upon high authority, THAT NO BUILDING IN WHICH TIMBER JOISTS ARE USED IS PRACTICALLY SECURE FROM THE DANGER OF FIRE; and when to this fact it is added that timber is also liable to dry-rot and the ravages of insects and vermin, for which it affords a ready harbour, the mischief arising from its extensive use will be sufficiently apparent.

It becomes, then, worth the attention of those who are interested in building, to inquire whether materials of an imperishable nature cannot be substituted for timber in the construction of floors, &c., without involving additional cost: and attention is invited to a number of buildings of all classes, either finished or in course of erection, upon the above improved system, in which joists, either of rolled or cast-iron, are substituted for timber, together with a solid superstructure of concrete, adapted to receive a finished surface of floor or roof of any kind.

Among the buildings at present in progress in London on this system is the new GUY'S HOSPITAL, an extensive range providing accommodation for 300 additional beds; and for buildings of this description and magnitude, as well as for PRIVATE DWELLING-HOUSES, OFFICES, WAREHOUSES, &c. it possesses very great advantages.

A detailed description of the system, estimates and all further information, may be obtained on application to the Proprietor of the patent,

Mr. BARRETT, late FOX and BARRETT,
18, York-buildings, Adelphi,
whose offices form part of a building erected on this principle, and where specimens of the rolled iron joists may be seen.

MERCHANTS & TRADESMAN'S MUTUAL LIFE ASSURANCE SOCIETY.
TRUSTEES.
Jeffery Smith, esq. Alfred Fearnside, esq.
Thomas How, esq.

ADVANTAGES OFFERED BY THIS SOCIETY.
Policies indisputable, except in cases of fraud.
All the medical fees paid by the Society.
Assurances of every description effected.

NON-FORFEITURE OF POLICIES.
Assurers who find it inconvenient to pay their premiums as they fall due, may have a credit on application to the board.
Loans granted on personal and other securities, in connection with life assurance. BONUS.
The following table shows the Bonuses declared on Policies effected with this Society prior to 8th March last:—

No of premium paid	Age when assured.	Annual premium.	Sum assured.	Bonus added	Amount now assured.
		£ s. d.	£	£ s. d.	£ s. d.
5	[illegible]	45 19 1	1,000	104 13 0	1,104 13 0
4	[illegible]	22 19 1	1,000	68 0 0	1,068 0 0
3	[illegible]	34 15 0	1,000	143 14 3	1,143 14 3

GEORGE THOMSON, Manager.
5, Chatham-pl. Blackfriars. THOS. MURGRAVE, Secretary.

CLERICAL, MEDICAL, and GENERAL LIFE ASSURANCE SOCIETY.
ADVANTAGES OFFERED.
EXTENSION OF LIMITS OF RESIDENCE.—The assured may reside in most parts of the world, without extra charge, and in all parts by payment of a small extra premium.
MUTUAL SYSTEM WITHOUT THE RISK OF PARTNERSHIP.
The small share of Profit divisible in future among the Shareholders being now provided for, without intrenching on the amount made by the regular bonus a, the Assured will hereafter derive all the benefits obtainable from a Mutual Office with at the same time, complete freedom from liability, secured by means of an ample Proprietary Capital—thus combining in the same office all the advantages of both systems.
The Assurance Fund already invested amounts to £30,000 and the Income exceeds £26,000 per annum.
CREDIT SYSTEM.—On Policies for the whole of Life, one half of the Annual Premiums for the first five years may remain on credit, and may either continue as a debt on the Policy, or may be paid off at any time.
LOANS.—Loans are advanced on Policies which have been in existence five years and upwards, to the extent of nine-tenths of their value.
BONUSES.—Five Bonuses have been declared; at the last in January, 1852, the sum of £31,192 was added to the Policies producing a Bonus varying with the different ages from 30s to 55 per cent. on the Premiums paid during the five years.
PARTICIPATION IN PROFITS.—Policies participate in the Profits in proportion to the number and amount of the Premiums paid between every division, so that if only one year's Premium be received previous to the books being closed for any division, the Policy on which it was paid will obtain its share. The books close for the next division on 30th June, 1856, therefore those who effect Policies before the 30th June next, will be entitled to one year's additional share of Profits over later assurers.
APPLICATION OF BONUSES.—The next and future Bonuses may be either received in cash, or applied at the option of the assured in any other way.
NON-PARTICIPATING.—Assurances may be effected for a Fixed Sum at considerably reduced rates and the Premiums for Term Policies are lower than at most other Safe Offices.
PROMPT SETTLEMENT OF CLAIMS.—Claims paid thirty days after proof of death, and all Policies are indisputable except in cases of fraud.
INVALID LIVES may be assured at rates proportioned to the increased risk.
POLICIES are granted on the lives of persons in any station and of every age, and for any sum on one life, from £50 to [illegible].
PREMIUMS may be paid yearly, half-yearly, or quarterly; but if a payment be omitted from any cause, the Policy can be revived within fourteen months.
The Accounts and Balance Sheets are at all times open to the inspection of the Assured, or of persons desirous to assure.
A copy of the last Report, with a Prospectus and Forms of Proposal, can be obtained of any of the Society's Agents, or will be forwarded free by addressing a line to
GEORGE R. PINCKARD, Resident Secretary.
70, Great Russell-street, Bloomsbury, London.

PUTNEY BRIDGE and PIER COMPANY.
(Registered provisionally)
Capital £8,000, in 1,600 Shares of £5 each.
Deposit £1 per Share, and no further Call until the Act of Parliament be obtained.
PROVISIONAL DIRECTION.
Wilford George Brett, Esq. Governor of the Chelsea Waterworks Company
Anthony F. Bainbridge, Esq. Putney.
Francis Lotterhos, Esq. Putney.
Captain F. A. Griffiths, R.N. Putney.
George Moore, Esq. Putney.
(With power to add to their number.)
CONSULTING ENGINEER.
James Simpson, Esq. C.E. F.R.S.
ENGINEER.
Samuel Clegg, Jun. M. Inst. C.E. F.G.S.
SOLICITORS.
Messrs. Few and Co.
BANKERS.
The Commercial Bank of London, 6, Henrietta-street, Covent-garden.
SECRETARY.
Augustus Griffiths, esq.

The inconvenient position and dangerous state of the present Bridge between Fulham and Putney, the very high tolls charged for transit over it, the occasional impossibility of passing it at high tides, and the serious impediment and danger which it offers to navigation, have been such as to render imperative the erection of a better structure. The Company has therefore been projected to carry into effect that long wished for and highly desirable object, a new Bridge over the Thames between Fulham and Putney, in order to facilitate the means of intercommunication, and to diminish the charges attending it.

It is proposed to construct the Bridge in the most substantial manner and of the most elegant form; the works will be executed subject to the approval of the Navigation Committee of the Corporation of London; and every security has been required and given that the Bridge will be adapted to facilitate and render secure the navigation of this part of the Thames.

It is not important that Parliamentary sanction be obtained for this measure in the present session, here are otherwise no tolls payable upon any traffic made across the river between the same points by the Chelsea Waterworks Company, which would be utterly useless for the purposes of any future bridge, and would form an additional impediment to the erection of a new structure, and at the same time the present item of revenue for a very large for the water-mains would be permanently lost.

It has been ascertained that there is much traffic between Putney and its neighbourhood and London, which at present takes a circuitous route, in order to avoid the heavy tolls now charged on Putney-bridge; and that the same cause, combined with the dangerous state of the present wooden structure, has prevented the extension into Putney of the facilities of travelling by omnibus to and from London now enjoyed by the inhabitants of Fulham.

The traffic of the populous districts on each side of the Thames at this spot, and that which will result from establishing a cheaper and easier line of communication from London to the north west part of Surrey, are calculated to afford adequate remuneration to the shareholders in the bridge, and the solidity of the structure will be such as to render the tolls have and a permanent, unfailing and gradually-increasing source of dividend, which will also be further augmented by the annual receipts of a considerable rent from the Chelsea Water-works Company, for the right to carry their mains over the Thames by means of the new bridge.

It is proposed also to build a landing-pier for steam-boat passengers as one of the piers of the centre arch of the bridge, and thereby constitute a further source of revenue, which, according to the present traffic at Putney by steam boat, would yield a return of about £40 per week, and which would doubtless increase with the extension of this rapidly-increasing and favourite suburb.

The prospect of an improved bridge received, as might be expected, the cordial sanction and support of the Navigation Committee of the Port of London; and in the immediate neighbourhood the approbation of the project is universal, and the accommodation earnestly desired.

The capital required for the building, purchase of land, approaches, and compensation is estimated at £8,000 which sum it is proposed to raise in the manner shown stated.

The annual revenue has been calculated as follows:—

Traffic, based upon the income derived from the present bridge, and after allowing for reduction of tolls	£1,400
Additional receipts, in consequence of reduction of tolls	400
The acquisition of omnibus and increased carriage traffic	200
Steam-boat pier	200
Rent for way-leave for the mains of the Chelsea Waterworks Company	100
	£2,400

This sum, after allowing for the expenses of maintenance, direction, &c. will yield a profitable return on the capital to be invested.

Applications for shares and prospectuses may be made to the Secretary, 11, Buckingham-street, Adelphi, in the following form:—

To the Directors of the Putney Bridge and Pier Company.

Gentlemen,—I request that you will allot to me shares in the above company, and I agree to accept such shares, or any smaller number that may be allotted to me, and to pay a deposit of £1 per share thereon, and to execute the Parliamentary Contract and Subscribers' Agreement when required.

Dated this day of 1852.

Name
Residence
Profession or Calling
Reference in full

SUBMARINE and EUROPEAN TELEGRAPH COMPANIES.—Notice is hereby given, that MESSAGES between LONDON and DOVER are forwarded through the above companies from the offices, No. 29, Cornhill; and Clarence-place, Dover. MESSAGES for the CONTINENT are forwarded from the offices, No. 29, Cornhill, London.—By order of the board.
29, Cornhill, Nov. 17, 1852. G. L. PARROTT, Secretary.

FOR SALE, a DUMPY LEVEL, by Troughton and Simms, also a THEODOLITE, in excellent order.—Apply by letter (post paid) to L. T. Office of "The Builder," 1, York-street, Covent-garden.

FLUORIC ACID.—This article can be obtained of the best quality, at 5s. per lb. at GRIFFITHS Chemical Warehouse, 61, Cheltenham-place, London.

THE BEST MATTING and MATS, of Cocoa-nut Fibre.—The Jury of Class 28, Great Exhibition, awarded the Prize Medal to T. TRELOAR, Cocoa-nut Fibre Manufacturer, 42, Ludgate-hill, London.

NOISELESS RISER.
GUTTA PERCHA CURTAIN and CORNICE RINGS.—These Rings have been much approved by the Faculty, particularly for nervous and aged patients. Owing to the peculiar properties of Gutta Percha, these rings do not make a noise when drawn along the pole or rod. The following sizes may be had, either with enriched or plain top:—1 inch diameter, 1¼ inch diam., 1½ inch diam., 1¾ inch diam., 2 inch diam., 2½ inch diam.
TUBING, LINING FOR TANKS, ORNAMENTAL MOULDINGS, &c. manufactured by the
GUTTA PERCHA COMPANY
(Patentees), 18, Wharf-road, City-road, London.

BUILDERS' BENEVOLENT INSTITUTION.
An ELECTION of FIVE PENSIONERS (three Males and two Females) will take place at TURLEAN'S, on THURSDAY, FEBRUARY 10, at the LONDON TAVERN, Bishopsgate-street. Candidates may obtain forms of application (to be returned on or before 6th DECEMBER) from the Secretary, at the Offices, 69, Bow-street, Covent-garden. Pensions £6. per annum for males, and £4. for females.
A. G. MARRIS, Sec.

THE BUILDERS' BALL, in aid of the funds of the Builders' Benevolent Institution, will take place at Willis's Rooms, St. James's, on the 3rd of FEBRUARY, 1853. Gentlemen wishing to assist by acting as Stewards on that occasion will please forward their names to Mr. JOSEPH BIRD, Hon. Secretary, 31, Portman-place, Edgware-road.

PRIZE CATTLE SHOW of the SMITHFIELD CLUB, 1852.—The ANNUAL EXHIBITION of PRIZE CATTLE, Sheep, Roots, Implements, &c. commences TUESDAY MORNING at EIGHT o'clock, and closes FRIDAY EVENING, 7th, 8th, 9th, and 10th DECEMBER. Bazaar, King-street, Smithfield. Open from Daylight till Nine in the evening. Admittance, One Shilling.

ROYAL COLOSSEUM.—Every MONDAY, at One Shilling.—The Panorama of London, Saloon of Sculpture, Conservatories, Gothic Aviary, Swiss Cottage, &c. &c. open daily from half-past ten till half-past four o'clock. In the Evening from seven till ten. Parts by Night, and the whole each illuminated brilliantly Illuminated. Admission, Day or Evening, 1s.; children and schools half-price.

CRYSTAL PALACE (admission 1s. only). At the CYCLORAMA, Albany-street, daily at three, evening at eight o'clock, grand diorama, Tableaux of the Great Exhibition and its contents, painted by Mr. D. Nevin, from the original studies, and on a scale nearly equal the original. Preserved roots, &c.

PATRON.—H. R. H. PRINCE ALBERT.
ROYAL POLYTECHNIC INSTITUTION.—ENTIRELY NEW EXHIBITION.—An Optical and Musical Illustration of "A Midsummer Night's Dream," the words from Shakspeare, the music by Horn, Stevens, Henry Wm. Barbor, and Dr. Gamble, every Evening except Saturday, at Half-past Nine. Lecture by Mr. Grigor on Ballooning and the Prospects of Aerial Navigation, illustrated by a beautiful Model of Paterson's Transatlantic Steam Vehicle Rapid Despatch, &c. Lecture by J. H. Pepper, esq. on Chemistry and its Manipulations. Lecture by Dr. Bachhoffner on Frictional Electricity. Illustrated by the Hydro-Electric Machines. Dissolving Views, with a Day and Night View of Waltner Castle, Chromatrope, &c.—Admission, 1s.; Schools and Children under ten years of age, half-price.

TO BUILDERS AND OTHERS.
SEASONED WOODS by the Patent Desiccating Process for SALE at E. L. FULLER'S Depôt, 5, Wharf-road, City-road, spanish and Honduras Mahogany, Wainscot, Honduras Limewood, Birch, Beech, and Veneers. Flooring and Match Boards, &c.

ANCIENT MANSION.—TO BE SOLD, Fifty superior large Yew, and several fine Ash, Elm, and Oak Trees, an Antique Carved Oak Staircase, with balustrade and handrail, to correspond, in fine condition; six handsome Wainscot Doors and a Turret Clock. The above to be seen on the estate, seven miles from the Stevenage station of the Great Northern Railway.—For further particulars apply to Mr. C. ALES, 11, Osborn-street, Whitechapel.

THE PERMANENT WAY COMPANY beg to call the attention of Boards of Directors, Engineers, and others interested in railways already made, to the important advantages obtained by FISH JOINTING the RAILS, as established by the annexed extract from the Report of the Directors of the Eastern Counties Railway to the half-yearly meeting of shareholders held on the 25th August. This invention not only causes a large current expense in keeping up the permanent way, but by its causing engines and carriages to run more smoothly, decreases the wear and tear of both the rails and rolling stock, and adds greatly to the comfort and security of the passengers. The PATENT FISH JOINTS have been adopted to the extent of upwards of 200 miles by the engineers of the following railways in this country and abroad:—

Eastern Counties Railway.
East Indian.
Edinburgh and Glasgow.
Ferrybridge.
London, Brighton, and South Coast.
London and North Western.
Midland.
Monmouthshire.
North and South Western Junction.
Wilmington and Lancefield.
York and North Midland.
York, Newcastle, and Berwick.

And are also in course of adoption on many other railways.

Extract from the Report of the Directors of the Eastern Counties Railway to the half-yearly Meeting of Shareholders held on the 25th August.

"The system of fish-jointing has hitherto fully borne out Mr. Ashcroft's reports, as giving a smoother road, with less wear and tear to the rolling stock, and at a much reduced expenditure in maintenance."

For lines not yet furnished with rails, the company drew attention to W. H. BARLOW'S PATENT RAIL, as by its adoption the permanent way may be constructed at the lowest rate per mile, and with greater durability than by any other known system. These rails have been adopted to the extent of upwards of 100 miles by the engineers of the following railways:—

Great Western.
Dublin and Belfast Railway.
London and North Western.
Midland.
Midland Great Western (Ireland).
Northern Railway of France.
Rouen and Havre.
Sambre and Meuse.
St. Germains and Versailles.
West Cornwall, and
Hereford, Ross, and Gloucester.

Copy of a letter from I. K. Brunel, Esq. C.E. to W. H. Barlow, Esq. C.E.:—

18, Duke-street, Nov. 10, 1852.

My dear Sir,—Our South Wales Railway from Swansea to Carmarthen, a distance of thirty miles, having been been completed and open for upwards of a month, I think it is due to you, whose system of Permanent Way has been adopted for the entire distance, to express to you my full satisfaction of the result. In the original contemplation there was considerable economy, as compared with other systems which I have hitherto generally adopted, of longitudinal timber. With greater experience it admits of very rapid laying, and so far as I can judge at present, it forms an excellent road.

I am, my dear Sir, yours very faithfully,
W. R. Barlow, Esq. (signed) I. K. Brunel.

THE PATENT CAST-IRON SLEEPERS of Mr. P. W. Barlow are adapted to double-headed rails of any pattern, and supersede the necessity for chairs. They have been adopted to the extent of upwards of 120 miles by the Engineers of the following:—

East Indian.
Midland.
East Lincolnshire.
London Derry and Enniskillen.

and several other lines.

Extract from the Directors' report to the last half yearly meeting of the London Derry and Enniskillen Railway.

"The trial afforded by the additional six months' working has also confirmed your Directors in the favourable opinion expressed by them respecting the Canterbury Road of Mr. Peter W. Barlow."

It has been ascertained the superintendents formed of it, and there can be no doubt that the adoption, coupled with the increased weight per lineal yard, the use of light engines, will effect a material saving in the maintenance of permanent way.

The Permanent Way Company confines itself entirely to the promoting business to suit their various patents, where to them upon very moderate terms. Every information may be obtained by applying to Mr. CHARLES MAY, C.E. 2, Great George-street, Westminster; or to WILLIAM HOWDEN, Secretary, 24, Great George-street.

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